DT05 Rec'd PCT/PTO 0 8 DEC 2004

SEQUENCE LISTING

```
<110> CASSART, Jean-Pol
      GERARD, Caterine Marie Ghislaine
      PALMANTIER, Remi M.
      HAMBLIN, Paul A.
<120> Immunogenic Compositions Comprising A Xenogenic Prostate Protein P501S
<130> B45310
<140> To Be Assigned
<150> PCT/EP03/06095
<151> 2003-06-06
<150> GB 0213364.3
<151> 2002-06-11
<150> GB 0221689.3
<151> 2002-09-18
<160> 11
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 553
<212> PRT
<213> Rattus norvegicus
<400> 1
Met Ile Gln Arg Leu Trp Ala Ser Arg Leu Leu Arg His Arg Lys Ala
                                    10
Gln Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu
                                25
Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
                            40
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
Leu Val Ser Val Pro Leu Leu Gly Ser Ala Ser Asp Gln Trp Arg Gly
Arg Tyr Gly Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Val
                                    90
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
            100
                                105
                                                    110
Leu Cys Ser Asp Thr Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
                                                125
       115
                            120
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
                        135
                                            140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
                    150
                                        155
Phe Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
                                    170
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
```

```
Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
                            200
                                                205
Ile Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Val Leu Gly
                        215
                                            220
    210
Pro Pro Glu Pro Ala Glu Gly Leu Leu Val Ser Ser Val Ser Arg Arg
                                        235
                    230
Cys Cys Ser Cys His Ala Gly Leu Ala Phe Arg Asn Leu Gly Thr Leu
                245
                                    250
Phe Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
            260
                                265
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
                            280
Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
                        295
                                            300
Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
                    310
                                        315
                                                             320
Ile Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
                325
                                    330
Phe Phe Ser Leu Val Met Asp Arg Leu Val Gln Lys Phe Gly Thr Arg
            340
                                345
                                                    350
Ser Val Tyr Leu Ala Ser Val Met Thr Phe Pro Val Ala Ala Ala Ala
                            360
Thr Cys Leu Ser His Ser Val Val Val Thr Ala Ser Ala Ala Leu
                        375
Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
                    390
                                        395
Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
                405
                                    410
Asp Ala Gly Gly Ser Ser Glu Asp Ser Gln Thr Thr Ser Phe Leu
           420
                                425
Leu Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Pro
                            440
                                                445
       435
Gly Gly Ser Ser Ile Leu Val Pro Pro Pro Ala Leu Cys Gly Ala Ser
                       455
                                            460
Ala Cys Asp Val Ser Met Arg Val Val Gly Glu Pro Pro Glu Ala
                    470
                                        475
Lys Val Val Thr Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
                                    490
Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
            500
                                505
                                                    510
Ile Val Gln Leu Ser His Ser Val Thr Ala Tyr Met Val Ser Ala Ala
        515
                            520
                                                525
Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
   530
                       535
                                            540
Lys Asn Asp Leu Ala Lys Tyr Ser Leu
                    550
545
```

```
<210> 2
<211> 2314
<212> DNA
<213> Rattus norvegicus
```

<400> 2

gggctcttag acaccgcaac aaaagcaact ttcctccaag ccactgccac ctgttgggtt 60 ttcacacatt tcgagcttta gttccgatcc ccagaacatc cacgtagttt ttctggcctt 120 ctggctgagc catggaggcc gacagaggag gggagaagtt tgaagcttga gaaggatttc 180

```
cgtatgcgca aggctaccca tgcttgtcct tcctcccatg accctggtca gccctcctct 240
gccctcctct tcctgccccc cttctctcca gggtccgact gacgagatgt gtccccatca 300
agcaaggcac tagatggtga cgtgttcagt gtgggatgag atgccgaagt ggtactcaag 360
ggctggccga aatgggagcc tggctgcacc ctcggaggtt ggtgctagca aggaggagaa 420
gccgcggcag ggctgactca aaacagctgt ggggtgtgtg aatggccccc ggacccctaa 480
ccgccctgtc catcatgatc cagaggctgt gggccagccg tctgctaagg catcggaaag 540
cccagctcct gctggtcaac ctgctaacct tcggcctgga ggtgtgcctg gctgctggca 600
ttacctatgt gccacccctt ctgctggaag tcggggtaga ggaaaagttc atgaccatgg 660
tgttgggcat tggcccagtg ctgggcctgg tttctgttcc actcctaggc tcagccagtg 720
accagtggcg tgggcgctat ggccgccgga gaccctttat ctgggctctg tccctgggtg 780
tectgetaag cetetteete atecegaggg eeggetgget ggeagggeta etgtgtteag 840
atactaggee cetggagttg geeetgetea tettgggagt ggggetgetg gaettttgeg 900
gccaggtgtg ctttactcca ctggaggcct tactctccga cctcttccgg gacccagacc 960
actgccgcca agccttctct gtctatgcct tcatgatcag cctcgggggc tgcctgggct 1020
acctettace tgccattgae tgggacacca gcgccctggc cccctaccta ggcactcagg 1080
aagaatgcct cttcggcctc ctcaccctca tttttctcat ctgtgtggca gccactctgc 1140
ttgtggctga ggaggcagtc cttggcccac ccgagccagc agaagggttg ttggtctcct 1200
tgtttccccg gctgcaccag ctgtgctgcc gaatgcctcg caccctgcgc cggctctttg 1320
tggctgagct gtgcagctgg atggcactta tgactttcac actgttctac acggacttcg 1380
tgggagaggg gctgtaccag ggtgtcccca gagcagagcc aggtaccgag gcccggagac 1440
actatgatga aggcattcga atgggcagcc tggggctctt cctgcagtgt gccatctccc 1500
tgttcttctc cctggtcatg gacaggctgg tacagaagtt cggcacacgg tcagtctacc 1560
tggccagtgt gatgacettt ecegtggetg cegetgeeac gtgeetgtee cacagegtgg 1620
ttgtagtgac agcctcagct gccctcaccg ggttcacctt ctcagccttg cagatcctgc 1680
cttacacgct cgcctccctc taccatcgag agaagcaggt gttcctgccc aaataccgag 1740
gggacgctgg aggtggtagc agtgaagaca gccaaacaac cagcttcttg ctaggcccta 1800
agccaggage tecetteece aatggacaeg tgggeeetgg eggeageage ateetggtge 1860
ccccacctgc actetgtggg gcctctgcct gtgatgtctc catgcgagtg gtagtgggtg 1920
agccacctga agccaaggtt gttactggac ggggcatttg cctggacctt gccatcctgg 1980
acagtgeett tetgetgtee eaggtggete egteeetgtt eatgggetee attgteeage 2040
tgagccactc tgtcactgcc tatatggtat cagctgcagg cttgggtctg gtcgccattt 2100
actttgctac acaggtagtg tttgacaaga atgacttggc caaatactca ctgtagaatt 2160
ctgtaaggca tcaaagaaga ggatctgcct ccccggttct cagccccaga gggctgcaga 2220
gctggtctct ttccggtctc tgttgccctg agtggctctc cactgccatc cgaaggcagt 2280
gaggtgtatg gctgcacagg ttggagcttt tggc
```

<210> 3 <211> 553 <212> PRT

<213> Maccaca fascicularis

<400> 3

Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala 10 Gln Leu Leu Ile Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu 25 Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Glu Val Gly Val 40 Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly 60 Leu Val Ser Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly 70 75 Arg Tyr Gly Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile 90 Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu 100 105

```
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
                        120
      115
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
                    135
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
                   150
                                      155
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
                                  170
               165
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
                               185
Gly Thr Gln Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
                            200
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
                        215
                                            220
Pro Ala Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Pro Ser His
                    230
                                       235
Cys Cys Pro Cys Trp Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
               245
                                   250
Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
           260
                               265
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
                           280
Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
                       295
Pro Arg Ala Glu Leu Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
                                       315
                   310
Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
               325
                                   330
Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
                               345
           340
Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
                           360
                                               365
Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
                       375
                                           380.
Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
                   390
                                       395
Ser Leu Tyr His Arg Glu Arg Gln Val Phe Leu Pro Lys Tyr Arg Gly
                405
                                   410
Asp Ala Gly Gly Thr Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
            420
                               425
Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
                           440
                                                445
Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
   450
                       455
                                           460
Ala Cys Asp Val Ser Val Arg Val Val Gly Glu Pro Thr Glu Ala
                   470
                                       475
Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
                                   490
               485
Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
                               505
Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
                           520
                                               525
Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
                       535
Lys Ser Asp Leu Ala Lys Tyr Ser Val
```

```
<210> 4
<211> 3514
<212> DNA
<213> Maccaca fascicularis
```

<400> 4

aaaaaaaaag ccgccggctg gcgcgcgtgg ggggcaagga aaagaggggg gaaaccagtc 60 tgcacgcgct ggctccgggt gacagccgcg cgcctaggcc aggcagcgtc tccctctgtc 120 acccagactg gaggcaatgt tetgateact geacactgea ecettgaeet eceagaetea 180 agcaatcctc ccatctcagc ctcttaagta gctgggacca caggatctga gtgatgagat 240 gtgtccccac tgaggtgccc cacagcagca ggtgttgagc atgggctgag aagctggacc 300 ggcaccaaag ggctggcgga aatgggcgcc tggctgattc ctaggcagtt ggcggcagca 360 aggaggagag gccgtggctt ccggagcaga gcggagacga agcagttctg gagtgcttaa 420 acggcccct gagccctacc cgcctggccc actatggtcc agaggctgtg ggtgagccgc 480 ctgctgcggc accggaaagc ccagctcttg ttgatcaacc tgctaacctt tggcctggaa 540 gtgtgtttgg ccgcaggcat cacctatgtg ccgcctctgc tgctggaagt gggggtagaa 600 gagaagttca tgaccatggt gctgggcatc ggtccagtgc tgggcctggt ctctgtccca 660 ctcctaggct cagccagtga ccactggcgc ggacgctatg gccgccggcg gcccttcatc 720 tgggcgctgt ccttgggcat cctgctgagc ctctttctca tcccaagggc tggctggctg 780 gcagggctgc tgtgcccgga tcccaggccc ctggagctgg cactgctcat cctgggcgta 840 gggctgctgg acttctgtgg ccaggtgtgc ttcactccac tggaggccct gctctctgac 900 ctgttccggg acccggacca ctgtcgccag gcctactccg tctatgcctt catgatcagt 960 cttgggggct gcctgggcta cctcctgcct gccattgact gggacaccag tgccctggcc 1020 ccctacctgg gcacccagga ggagtgcctc tttggcctgc tcaccctcat cttcctcacc 1080 tgcgtagcag ccacactgct ggtggccgag gaggcagcac tgggccccgc cgagccagcg 1140 gaagggetgt etgeeceete eetgeegtee eactgetgte egtgetggge eegeetgget 1200 ttccggaacc tgggcgccct gcttccccgg ctgcaccagc tgtgctgccg catgccccgc 1260 accetgegee ggetettegt ggetgagetg tgeagetgga tggeaeteat gaeetteaeg 1320 ggcaccgagg cccggagaca ctatgatgaa ggcgttcgga tgggcagtct ggggctgttc 1440 ctgcagtgcg ccatctccct ggtcttctct ctggtcatgg accggctggt gcagcgattc 1500 ggcactcgag cagtctatct ggccagtgtg gcagctttcc ctgtggctgc cggtgccacg 1560 tgcctgtccc acagtgtggc tgtggtgacg gcttcagccg ccctcactgg gttcaccttc 1620 tcagccctgc agatcctgcc ctacacactg gcctccctct accaccggga gaggcaggtg 1680 ttcctgccca aataccgagg ggacgctgga ggcactagca gtgaggacag cctgatgact 1740 agetteetge caggeectaa geetggaget eeetteeeta atggacaegt gggtgetgga 1800 ggcagtggcc tgcttccacc tccacccgcg ctctgcgggg cctctgcctg cgatgtctct 1860 gtacgtgtgg tggtgggtga gcccaccgag gccagggtgg ttccgggccg gggcatctgc 1920 ctggacctcg ccatcctgga tagtgccttc ctgctgtccc aggtggcccc gtccctgttc 1980 atgggeteca tegtecaget cagecagtet gteactgeet atatggtgte tgetgeagge 2040 ctgggtctgg ttgccattta ctttgctaca caggtagtat ttgacaagag cgacttggcc 2100 aaatactcgg tgtagaaaac ttccagcaca ttggggtgga gggcctgcct cactgggtcc 2160 cageteecea etettigtia geeceatggg getgetggge tggeegeeag titetgttige 2220 tgccaaagta atgtggctct ctgctgccac cctgtgctgc tgaggtgcgt agctgcacag 2280 ctgggggctg gggcatccct ctccctcctc cccagtctct agggctgcct gactggaagc 2340 cttccaaggg ggtttcagtc tggacttcta cagggaggct agaagggcag ggcatttgat 2400 togotocatg cactggaatg tggggactot gcaggtggat tacccaggot cagggttaac 2460 agctagcctc ctggctgaga catacctaga gaaggggttt tgggagctga gtaaactcag 2520 teacetggtt teceacetet aageeeeett aaeetgeage tteatttaat gtagetettg 2580 catgggagtt tctaggatga aacactcctc cgtgggattt gaacgtatga aagttatttg 2640 taggggaaga gtcctgaggg gcaacacacc aggtcccctc agcccacagc actgcctttt 2700 tgctgatccc ctgactctta ccttttatca ggacgtggcc tattggtccc tttgttgcca 2760 tcatagggac acaggcattt aaatatttaa cttatttatt taacaaagta gaagggaatc 2820 cattgctagc ttttgtgtgt tggtgtctaa gatttgggta gggtgggatc cccaacaatc 2880 aggtccactg agatcactgg tcattgggct gatcattgcc agaatcttct tctcctgggg 2940 totggctcct caaaatgcct aacccaggac cttggaaatt ttactcatcc cgactgataa 3000

```
ttccaaatgc tgttacccaa ggttaggggg ttgaaggaag gtggagggtg gggcttcagg 3060
totoaacago ttocotaaco accootttto tottggooca gootggttoo coccacttot 3120
actococtot actytotota ggactygyot gatyaayyoa otyootyaaa tttocotoac 3180
ccccaacttt ccccactggc tccacaaccc tgtttggagc tgttgcagga ccagaagcac 3240
aaagtgtggt ttcccaggcc tttgtccatc tcagcccccc agagtatatc tgtgcttggg 3300
gaatctcaca cagaaactca ggagcacccc ctgcctgagc taaggaggtc ttatctctca 3360
ggggggttta agtgccgttt gcaataatgt cttatttatt tagcggggca aatattttat 3420
actgtaagtg agcaatcagt ataatgttta tggtgatgaa attaaaggct ttcttatatg 3480
tttaaaaaaa aaaaaaaaa aaaaaaaaa aaaa
<210> 5
<211> 553
<212> PRT
<213> Homo sapiens
<400> 5
Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala
                                    10
Gln Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu
Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
                            40
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
                        55
Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly
Arg Tyr Gly Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
                                    90
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
           100
                                105
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
                            120
                                                125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
                        135
                                            140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
                                        155
                    150
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
               165
                                    170
                                                        175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
            180
                                185
Gly Thr Gln Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
                            200
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
                        215
                                            220
Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His
                    230
                                        235
Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
                                    250
               245
Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
           260
                                                    270
                                265
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
                                                285
                            280
Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
                        295
Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
                                        315
                    310
```

Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu

```
325
                                    330
                                                        335
Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
            340
                               345
                                                    350
Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
       355
                            360
Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
    370
                        375
                                            380
Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
                    390
                                        395
Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
                                    410
Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
            420
                                425
Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
                            440
Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
    450
                        455
                                            460
Ala Cys Asp Val Ser Val Arg Val Val Gly Glu Pro Thr Glu Ala
                    470
                                        475
Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
                                    490
               485
Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
                                505
Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
                            520
Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
                       535
                                            540
Lys Ser Asp Leu Ala Lys Tyr Ser Ala
                   550
<210> 6
<211> 255
<212> PRT
<213> Homo sapiens
<400> 6
Gly Leu Tyr Gln Gly Val Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg
Arg His Tyr Asp Glu Gly Val Arg Met Gly Ser Leu Gly Leu Phe Leu
                                25
Gln Cys Ala Ile Ser Leu Val Phe Ser Leu Val Met Asp Arg Leu Val
                           40
Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala Ser Val Ala Ala Phe
                       55
                                            60
Pro Val Ala Ala Gly Ala Thr Cys Leu Ser His Ser Val Ala Val Val
                   70
                                        75
Thr Ala Ser Ala Ala Leu Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile
                                    90
Leu Pro Tyr Thr Leu Ala Ser Leu Tyr His Arg Glu Lys Gln Val Phe
                               105
Leu Pro Lys Tyr Arg Gly Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser
                           120
Leu Met Thr Ser Phe Leu Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro
                       135
Asn Gly His Val Gly Ala Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro
                   150
                                        155
```

```
Ala Leu Cys Gly Ala Ser Ala Cys Asp Val Ser Val Arg Val Val
           165
                       170
Gly Glu Pro Thr Glu Ala Arg Val Val Pro Gly Arg Gly Ile Cys Leu
                              185
          180
Asp Leu Ala Ile Leu Asp Ser Ala Phe Leu Leu Ser Gln Val Ala Pro
                          200
                                              205
Ser Leu Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val Thr Ala
                       215
Tyr Met Val Ser Ala Ala Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala
                   230
                                       235
Thr Gln Val Val Phe Asp Lys Ser Asp Leu Ala Lys Tyr Ser Ala
<210> 7
<211> 231
<212> PRT
<213> Homo sapiens
<400> 7
Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu Val Phe
                                  10
Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val
           20
                               25
Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys
                           40
Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu Thr Gly
                       55
Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala Ser Leu
                  70
                                      75
Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly Asp Thr
               85
                                  90
Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu Pro Gly
                              105
          100
Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly
                          120
                                               125
Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys
                       135
                                           140
Asp Val Ser Val Arg Val Val Gly Glu Pro Thr Glu Ala Arg Val
                   150
                                       155
Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp Ser Ala
                                   170
Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser Ile Val
           180
                               185
                                                   1.90
Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala Ala Leu
                          200
                                               205
Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp Lys Ser
                      215
                                           220
Asp Leu Ala Lys Tyr Ser Ala
                   230
```

<210> 8 <211> 1788 <212> DNA <213> Artificial Sequence

Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val Ser

70

Leu Glu Lys Arg Glu Ala Glu Ala Met Val Leu Gly Ile Gly Pro Val Leu Gly Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys Asp Val Ser Val Arg Val Val Gly Glu Pro Thr Glu Ala Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met

```
540
                        535
    530
Gly Ser Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser
                    550
                                        555
Ala Ala Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val
                565
                                   570
Phe Asp Lys Ser Asp Leu Ala Lys Tyr Ser Ala Gly Gly His His His
                                585
His His His
        595
<210> 10
<211> 553
<212> PRT
<213> Mus musculus
<400> 10
Met Ile Gln Arg Leu Trp Ala Ser Arg Leu Leu Arg His Arg Lys Ala
                                    10
Gln Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu
            20
                                25
Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
                            40
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
                        55
Leu Val Ser Val Pro Leu Leu Gly Ser Ala Ser Asp Gln Trp Arg Gly
                    70
                                        75
Arg Tyr Gly Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Val
                85
                                    90
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
           100
                                105
                                                   110
Leu Tyr Pro Asp Thr Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
                            120
                                                125
       115
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
                        135
                                            140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
                    150
                                        155
Phe Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
                                    170
                165
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Val Leu Ala Pro Tyr Leu
                                185
Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
                            200
                                                205
Ile Cys Met Ala Ala Thr Leu Phe Val Thr Glu Glu Ala Val Leu Gly
                        215
                                            220
Pro Pro Glu Pro Ala Glu Gly Leu Leu Val Ser Ala Val Ser Arg Arg
                                        235
                    230
Cys Cys Pro Cys His Val Gly Leu Ala Phe Arg Asn Leu Gly Thr Leu
               245
                                    250
Phe Pro Arg Leu Gln Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
                                265
            260
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
                            280
Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
                        295
```

Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly

```
Ile Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
                325
                                     330
                                                         335
Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Lys Phe Gly Thr Arg
                                                     350
            340
                                 345
Ser Val Tyr Leu Ala Ser Val Met Thr Phe Pro Val Ala Ala Ala Ala
        355
                                                 365
                             360
Thr Cys Leu Ser His Ser Val Val Val Thr Ala Ser Ala Ala Leu
    370
                        375
                                             380
Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
385
                    390
                                         395
Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
                                     410
Asp Ala Gly Gly Ser Ser Gly Glu Asp Ser Gln Thr Thr Ser Phe Leu
            420
                                 425
                                                      430
Pro Gly Pro Lys Pro Gly Ala Leu Phe Pro Asn Gly His Val Gly Ser
        435
                             440
Gly Ser Ser Gly Ile Leu Ala Pro Pro Pro Ala Leu Cys Gly Ala Ser
    450
                        455
                                             460
Ala Cys Asp Val Ser Met Arg Val Val Gly Glu Pro Pro Glu Ala
                    470
                                         475
Arg Val Val Thr Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
                485
                                     490
                                                          495
Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
                                 505
Ile Val Gln Leu Ser His Ser Val Thr Ala Tyr Met Val Ser Ala Ala
                             520
Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
                        535
                                             540
Lys Asn Asp Leu Ala Lys Tyr Ser Val
545
                    550
```

```
<210> 11
<211> 2188
<212> DNA
```

<213> Mus musculus

<400> 11

```
gagatttaaa aggcgcccgc tggcgcgcgt tggtgamsca ggbgtcgccg agctcgcacg 60
cgccagcccc aggtgacagc cgcacgccgg gccaggatct gaccgacgag atgtgtcccc 120
atcaagcaag gcactagatg gtgacgtgtt tagcgtggga cgagatgctg aattggcact 180
aaagggctgg cagaaatggg aacctggctg caccctagga ggttagtgct agtgaggagg 240
agaagccacg gcagggctga ctcaaagcag ctgtggagta tgtgagtagc ccctggaacc 300
ctacctgccc tgtccatcat gatccagagg ctgtgggcca gccgtctgct acggcaccgg 360
aaageteage teetgetggt caacetgete acetttggee tggaggtgtg eetggetgee 420
ggcattacct atgtgccacc cettetgetg gaagtegggg tggaggagaa atteatgace 480
atggtgttgg gcattggccc agtgctaggc ctggtttctg ttccactcct aggctcagcc 540
agtgaccagt ggcgtgggcg ctatggccgc cggagaccct ttatctgggc tttgtccctg 600
ggtgtcctgc taagcctctt tctcatcccg agggctggct ggctggcagg actgctgtac 660
ccagacacca ggcccctgga gttggccctg ctgatcttgg gagtggggct gctggacttt 720
tgtggccagg tgtgctttac tccattggag gccttactct ccgacctctt ccgggaccca 780
gaccactgcc gccaagcctt ctctgtctac gccttcatga tcagccttgg gggctgcctg 840
ggctacctct tacctgccat tgactgggac accagcgttc tggcccccta cctgggtact 900
caggaagaat gcctctttgg cctcctcacc ctcattttcc tcatctgcat ggcagccact 960
ctgtttgtga cggaggaggc agtactgggc ccacccgagc cggcagaagg gttgttggtc 1020
tetgeegtgt egegeegatg etgeeeatge eacgttggee tggettteeg gaatetgggt 1080
accetgttte eeeggetgea geagetgtge tgeegeatge etegeaceet acgeegaete 1140
```

```
tttgtggctg agctgtgcag ctggatggca cttatgactt tcacactgtt ctacacggac 1200
ttcgtgggag aggggctgta cccagggtgta cccagagccg agccaggcac cgaggcccgg 1260
agacactatg atgaaggcat tcgaatgggc agcctggggc tcttcctgca gtgtgccatc 1320
tccctggtct tctccctggt catggacagg ctggtacaga agttcggcac acggtcagtc 1380
tatctggcca gtgtgatgac ctttcctgtg gctgccgctg ccacctgcct gtcccacagc 1440
gtggtggtag tgacagcete agetgeeete acegggttea eettetegge ettgeagate 1500
ctgccttaca cgctcgcctc cctctaccac cgtgagaagc aggtgttcct gcccaaatac 1560
cgaggggacg ctggaggtag cagcggtgag gacagccaga caaccagctt cttgccaggc 1620
cctaaqccag gagctctctt ccccaatgga cacgtgggct ctggcagcag cggcatcctg 1680
gcccctccac ctgcactctg tggggcctct gcctgcgatg tctccatgcg agtggtggtg 1740
ggtgagccac ctgaggccag ggttgttacg ggacggggca tttgcctgga cctggccatt 1800
ctggacagtg cctttctgct gtcccaggtg gctccgtccc tgttcatggg ctccattgtc 1860
cagctgagcc actctgtcac tgcctatatg gtatcagctg caggcttggg tctggtcgcc 1920
atttactttg ctacacaggt agtgtttgac aagaacgact tggccaaata ctcagtgtag 1980
aattgtgtaa ggcatcaaag agagggtctg cctcatgggt tctcagccct tagagggctg 2040
cagagetgge etetecaggt etttgtegee taagtggete tetgetgeea eectaaggea 2100
gtgaggtgta ttgttgcaca gataggagcc agagctttcg gggctctggc ttcagagtct 2160
                                                                  2188
ggctggccta ctggcagcct ctcgcatg
```